

Title: *DNA Encoding Human Serine  
Protease D-G*  
Inventor(s): Darrow et al.  
Docket No. ORT1273DIV  
Appln. No.: To Be Assigned

FIGURE 1 A  
NUCLEOTIDE SEQUENCE

>protease D-G (SEQ.ID.NO.:1)

CAACTTCACTTGTAGGGCTGTTTTAATCAAGCTGCCCAAAGTCCCCCAATCACTCCTGGA  
ATACACAGAGAGAGGCAGCAGCTTGCTCAGCGGACAAGGATGCTGGGCGTGAGGGACCAA  
GGCCTGCCCTGCACTCGGGCCTCCTCCAGCCAGTGCTGACCAGGGACTTCTGACCTGCTG  
GCCAGCCAGGACCTGTGTGGGGAGGCCCTCCTGCTGCCTTGGGGGTGACAATCTCAGCTCC  
AGGCTACAGGGAGACCGGGAGGATCACAGAGCCAGCATGGATCCTGACAGTGATCAACCT  
CTGAACAGCCTCGATGTCAAACCCCTGCGCAAACCCCGTATCCCCATGGAGACCTTCAGA  
AAGGTGGGGATCCCCATCATCATAGCACTACTGAGCCTGGCGAGTATCATCATTGTGGTT  
GTCCTCATCAAGGTGATTCTGGATAAATACTACTTCCTCTGCGGGCAGCCTCTCCACTTC  
ATCCCAGGAAGCAGCTGTGTGACGGAGAGCTGGACTGTCCCTTGGGGGAGGACGAGGAG  
CACTGTGTCAAGAGCTTCCCCGAAGGGCCTGCAGTGGCAGTCCGCCTCTCCAAGGACCGA  
TCCACACTGCAGGTGCTGGACTCGGCCACAGGGAAGTGGTTCTCTGCCTGTTTCGACAAC  
TTCACAGAAGCTCTCGCTGAGACAGCCTGTAGGCAGATGGGCTACAGCAGCAAACCCACT  
TTCAGAGCTGTGGAGATTGGCCCAGACCAGGATCTGGATGTTGTTGAAATCACAGAAAAC  
AGCCAGGAGCTTCGCATGCGGAACTCAAGTGGGGCCCTGTCTCTCAGGCTCCCTGGTCTCC  
CTGCACTGTCTTGCTGTGGGAAGAGCCTGAAGACCCCCCGTGTGGTGGGTGGGGAGGAG  
GCCTCTGTGGATTCTTGGCCTTGGCAGGTGAGCATCCAGTACGACAAACAGCACGTCTGT  
GGAGGGAGCATCCTGGACCCCCACTGGGTCTCAGCGCAGCCCACTGCTTCAGGAAACAT  
ACCGATGTGTTCAACTGGAAGGTGCGGGCAGGCTCAGACAAACTGGGCAGCTTCCCATCC  
CTGGCTGTGGCCAAGATCATCATCATTGAATTCAACCCCATGTACCCCAAAGACAATGAC  
ATCGCCCTCATGAAGCTGCAGTTCCCACTCACTTTCTCAGGCACAGTCAGGCCCATCTGT  
CTGCCCTTCTTTGATGAGGAGCTCACTCCAGCCACCCCACTCTGGATCATTGGATGGGGC  
TTTACGAAGCAGAATGGAGGGAAGATGTCTGACATACTGCTGCAGGCGTCAGTCCAGGTC  
ATTGACAGCACACGGTGCAATGCAGACGATGCGTACCTGGGGGAAGTCACCGAGAAGATG  
ATGTGTGCAGGCATCCCGGAAGGGGGTGTGGACACCTGCCAGGGTGACAGTGGTGGGCCC  
CTGATGTACCAATCTGACCAGTGGCATGTGGTGGGCATCGTTAGCTGGGGCTATGGCTGC  
GGGGGCCCCGAGCACCCCAGGGGTATACACCAAGGTCTCAGCCTATCTCAACTGGATCTAC  
AATGTCTGGAAGGCTGAGCTGTAATGCTGCTGCCCCCTTGCAGTGCTGGGAGCCGCTTCC  
TTCCTGCCCTGCCACCTGGGGATCCCCCAAAGTCAGACACAGAGCAAGAGTCCCCTTGG  
GTACACCCCTCTGCCCACAGCCTCAGCATTTCTTGGAGCAGCAAAGGGCCTCAATTCCTA  
TAAGAGACCCTCGCAGCCCAGAGGCGCCCAGAGGAAGTCAGCAGCCCTAGCTCGGCCACA  
CTTGGTGCTCCCAGCATCCCAGGGAGAGACACAGCCCACTGAACAAGGTCTCAGGGGTAT  
TGCTAAGCCAAGAAGGAACCTTCCCACTACTGAATGGAAGCAGGCTGTCTTGTAAG  
CCCAGATCACTGTGGGCTGGAGAGGAGAAGGAAAGGGTCTGCGCCAGCCCTGTCCGTCTT  
CACCCATCCCCAAGCCTACTAGAGCAAGAAACCAGTTGTAATATAAAATGCACTGCCTAC  
TGTTGGTATGACTACCGTTACCTACTGTTGTATTGTTATTACAGCTATGGCCACTATTA  
TTAAAGAGCTGTGTAACATCA

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FIGURE 1 B  
AA SEQUENCE

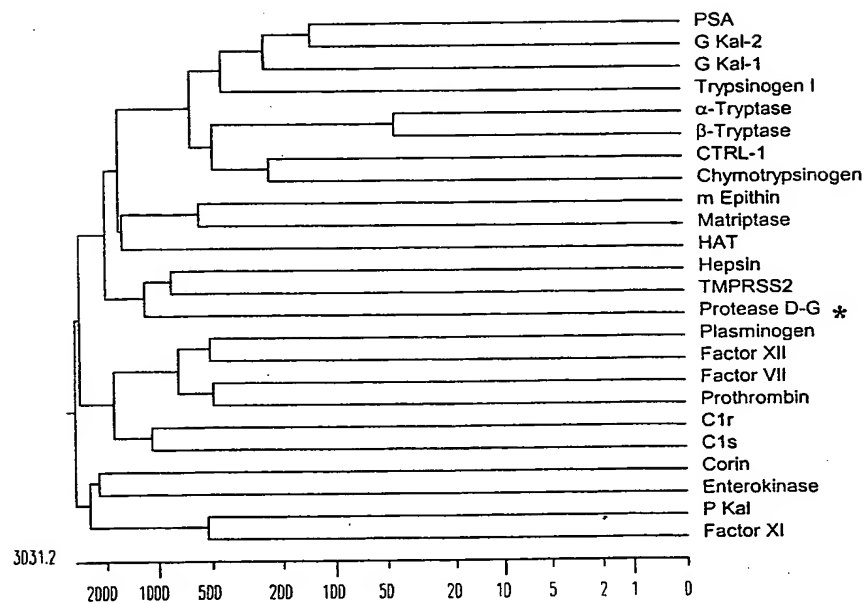
>protease D-G (SEQ.ID.NO.:2)

MDPDSQPLNSLDVKPLRKPRIPMETFRKVGIPITIIALLSLASIIIVVVLIRVILDKYYF  
LCGQPLHFIPRKQLCDGELDCPLGEDEEHCVKSFPEGPAVAVRLSKDRSTLQVLDSATGN  
WFSACFDNFTEALAETACRQMGYSSKPTFRAVEIGPDQDLVVEITENSQELMRNSSGP  
CLSGSLVSLHCLACGKSLKTPRVVVGEEASVDSWPWQVSIQYDKQHVC GGSILDPHWVLT  
AAHCFRKHTDVFNWKVRAGSDKLGSFPSLAVAKIIIIIEFNPMYPKDNDIALMKLQFPLTF  
SGTVRPICLPFFDEELTPATPLWIIIGWGFTKQNGGKMSDILLQASVQVIDSTRCNADDAY  
QGEVTEKMMCAGIPEGGVDTCCQGDSSGGLMYQSDQWHVVGIVSWGYCGGPSTPGVYTKV  
SAYLNWIYNVWKAEL

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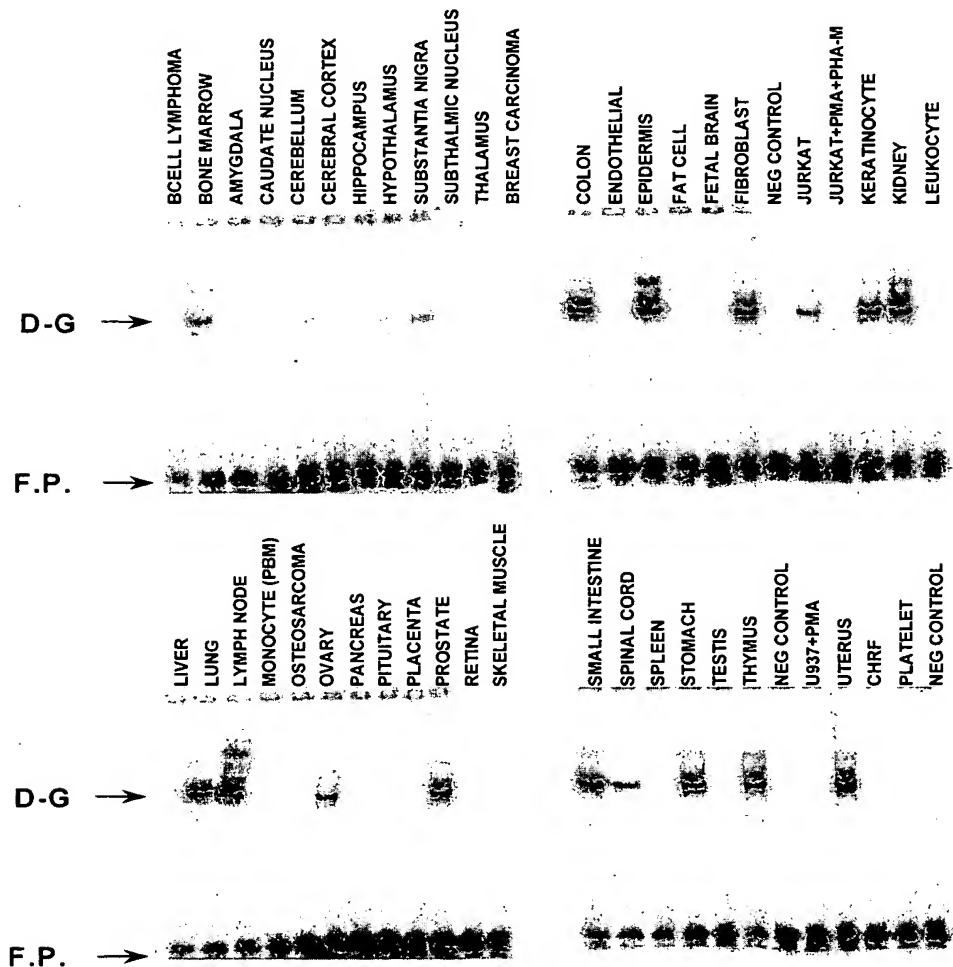
FIGURE 2  
PHYLOGENETIC TREE



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FIGURE 3  
TISSUE DISTRIBUTION

Protease D-G mRNA Tissue Distribution



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FIGURE 4 -A  
CONSTRUCT NUCLEOTIDE SEQUENCE

>PFEK-D-G-HIS ERI-HCII (SEQ.ID.NO.:8)

GAATTCACCACCATGGACAGCAAAGGTTTCGTCGCAGAAATCCCGCCTGCTCCTGCTGCTG  
GTGGTGTCAAATCTACTCTTGTGCCAGGGTGTGGTCTCCGACTACAAGGACGACGACGAC  
GTGGACGCGGCCGCTCTTGCTGCCCCCTTTGATGATGATGACAAGATCGTTGGGGGCTAT  
GCTCTAGATGTGGATTCTTGCCCTTGGCAGGTCAGCATCCAGTACGACAAACAGCACGTC  
TGTGGAGGGAGCATCCTGGACCCCCACTGGGTCCTCACGGCAGCCCACTGCTTCAGGAAA  
CATACCGATGTGTTCAACTGGAAGGTGCGGGCAGGCTCAGACAAACTGGGCAGCTTCCCA  
TCCCTGGCTGTGGCCAAGATCATCATCATTGAATTCAACCCCATGTACCCCAAAGACAAT  
GACATCGCCCTCATGAAGCTGCAGTTCCCACTCACTTTCTCAGGCACAGTCAGGCCCATC  
TGTCTGCCCTTCTTTGATGAGGAGCTCACTCCAGCCACCCCACTCTGGATCATTGGATGG  
GGCTTTACGAAGCAGAATGGAGGGAAGATGTCTGACATACTGCTGCAGGCGTCAGTCCAG  
GTCATTGACAGCACACGGTGCAATGCAGACGATGCGTACCTGGGGGAAGTCACCGAGAAG  
ATGATGTGTGCAGGCATCCCGGAAGGGGGTGTGGACACCTGCCAGGGTGACAGTGGTGGG  
CCCCTGATGTACCAATCTGACCAGTGGCATGTGGTGGGCATCGTTAGCTGGGGCTATGGC  
TGCGGGGGCCCCGAGCACCCCAAGGGTATACACCAAGGTCTCAGCCTATCTCAACTGGATC  
TACAATGTCTGGAAGGCTGAGCTGTCTAGACATCACCATCACCATCACTAGCGGCCGCTT  
CCCTTTAGTGAGGGTTAATGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGAC  
AAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTG  
CTTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAGCTTGTGAGAAGTACTAGAG  
GATCATAATCAGCCATACCACATTTGTAGAGGTTTACTTGCTTTAAAAAACCTCCCA  
CCTCCCCCTGAACCTGAAACATAAAATGAATGCAATTGTTGTTGTTAAC

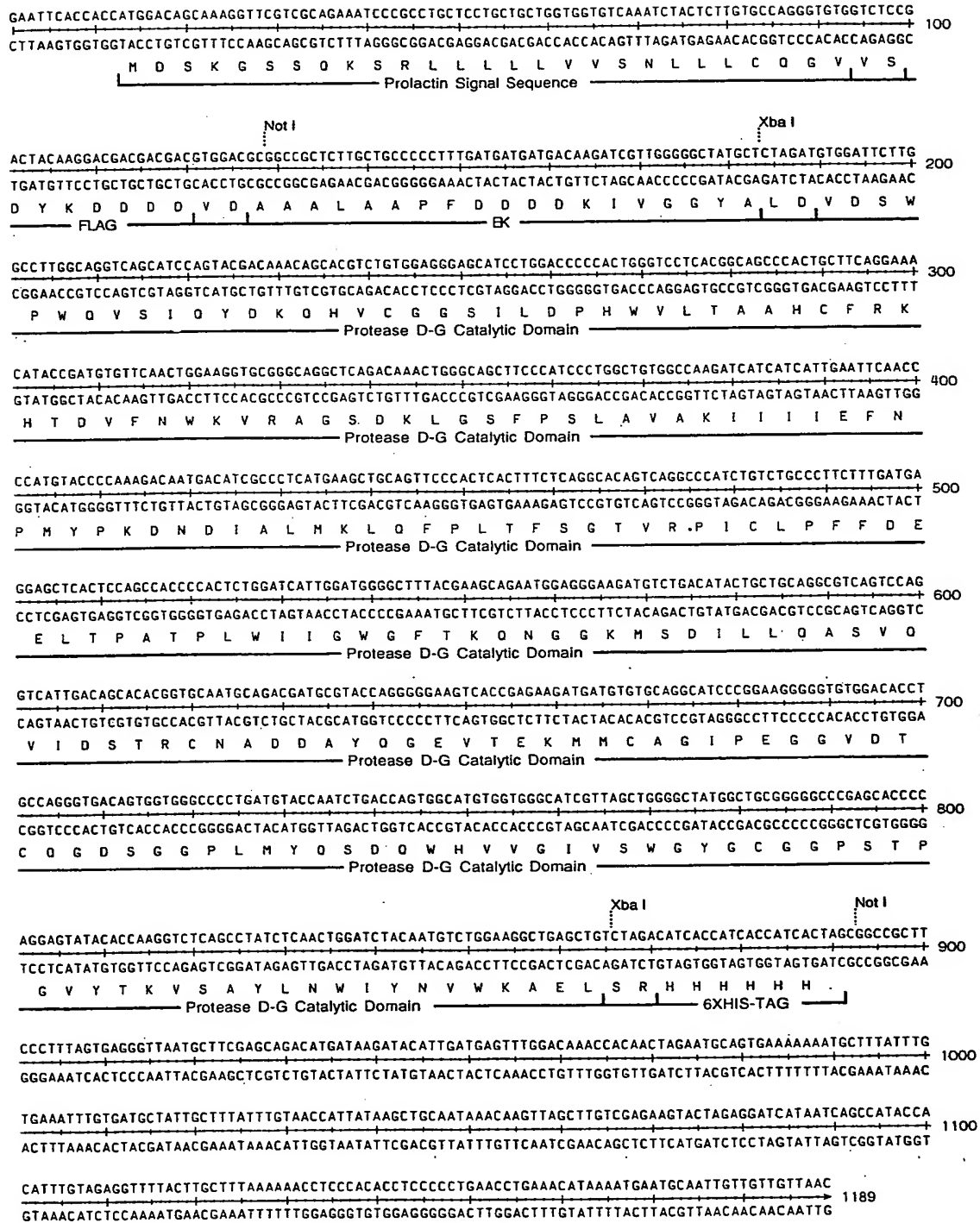
FUSION PROTEIN

>PFEK-D-G-HIS (SEQ.ID.NO.:9)

MDSKGSSQKSRLLLLLLVSNLLLCQGVVSDYKDDDDVDAAALAPFDDDDKIVGGYALDVS  
WPWQVSIQYDKQHVCSSILDPHWLTAHCFRKHTDVFNWKVRAGSDKLGSFPSLAVAKII  
IIEFNPMYPKDNDIALMKLQFPLTFSGTVRPICLPFFDEELTPATPLWIIIGWGFTKQNGGKM  
SDILLQASVQVIDSTRCNADDAYQGEVTEKMMCAGIPEGGVDTCCQGDSSGGLMYQSDQWHVV  
GIVSWGYGCGGPSTPGVYTKVSAYLNWIYNVWKAELSRHHHHHH

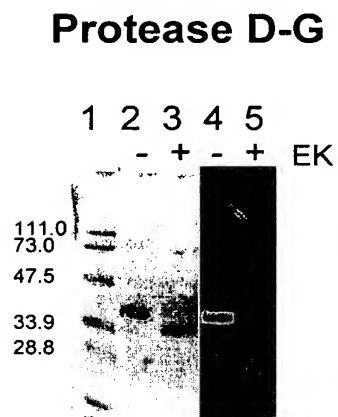
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FIGURE 4-B



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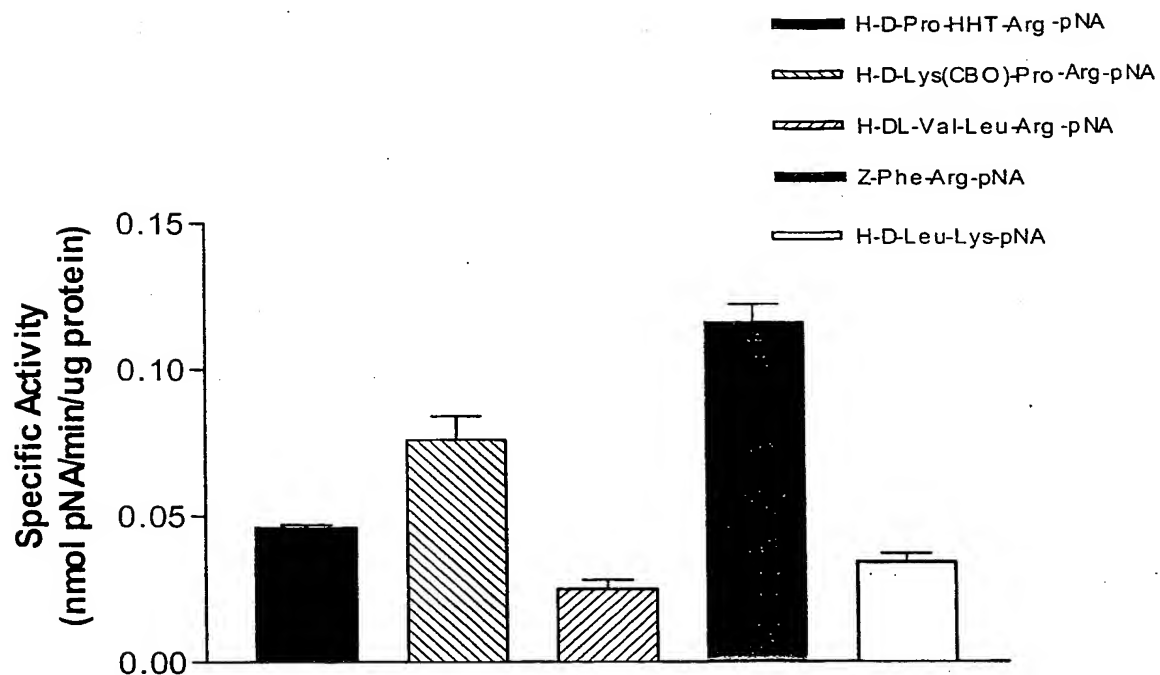
FIGURE 5  
PAGE - WESTERN BLOT



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FIGURE 6

### Chromogenic Activity of Protease D-G



H = free amine  
D = D-isomer  
CBO = carbobenzoxy  
HHT = hexahydrotyrosyl  
Z = benzyloxycarbonyl  
pNA = p-nitroanilide  
DL = D- and L- isomers